UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,021.	06/25/2004	Jixiong Dong	9896-023/NP	2768

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EXAMINER
CHRISS, ANDREW W

ART UNIT	PAPER NUMBER
2609	

MAIL DATE	DELIVERY MODE
07/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/500,021	DONG, JIXIONG
	Examiner	**Art Unit**	
	Andrew Chriss	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 June 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *9/29/2004*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1.   Figure 6 should be designated by a legend such as --Prior Art-- because only that which is

old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR

1.121(d) are required in reply to the Office action to avoid abandonment of the application. The

replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR

1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted

by the examiner, the applicant will be notified and informed of any required corrective action in

the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2.   **Claim 7** objected to because of the following informalities: claim language cites

"adjusting and crossing services which are sent to the same minimum protection unit from

different minimum protection units to the same minimum protection unit." Examiner

recommends changing the claim language to read "adjusting and crossing services which are sent

to the same minimum protection unit from different minimum protection units." Appropriate

correction is required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

4.   **Claim 3** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to

particularly point out and distinctly claim the subject matter which applicant regards as the

invention. Specifically, the claim cites a determination process in step d3 wherein a node is

determined to be *either* (emphasis added) a passing node, a bridging node, or a switching node.

Therefore, a single node can only be determined to be one of the above listed nodes. However,

the claim further cites "sending down a passing page to the passing node, sending down a

bridging page to the bridging node *and* sending down a switching page to the switching node"

(emphasis added). The multiple actions listed in the claim do not match the singularly

deterministic evaluation made at the beginning of step d3, i.e., if a node is determined to be a

passing node, a bridging node would not have been identified, and a bridging page would

therefore not be able to have been sent.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   **Claims 1 and 5-7** rejected under 35 U.S.C. 102(b) as being anticipated by Chapman

(United States Patent 5,974,027).

Regarding Claim 1, Chapman teaches a channel switching protection method for a

Synchronous Digital Hierarchy (SDH) fiber network. With regards to Applicant's claimed *Step*

A, Chapman teaches a network of nodes (Figure 1), wherein each node supports multiple

working channels (column 1, line 64), thus physically dividing the optical port into multiple

minimum protection units. With regards to Applicant's claimed *Step B*, Chapman teaches an

automatic protection switch byte (APS) which can represent multiple values and is used to define

a state of a channel (column 4, lines 1-2), thus dividing the minimum protection units of more

than one protection channel in each optical port into different logic-systems to form more than

one logic-system. With regards to Applicant's claimed *Step C*, Chapman teaches APS values

that denote the equivalent of Applicant's claimed working modes. Figure 1 shows a network in

the absence of a fault condition, indicated by the APS value "1111" (column 1, table 1), thus a

normal working mode. Figure 2 shows a network in which a node is assigned an APS value

equivalent to a switching mode, since the working path input of Node 3 is patched to the

protection ring output (Column 6, lines 1-10). Figure 3 shows a network in which a node is

assigned an APS value equivalent to a bridging working mode, as the protection ring input of

Node 4 is connected to the protection ring output (column 4, lines 11-20). Figure 5 shows a

network in which a node is assigned an APS value equivalent to a passing working mode, as the

protection ring input of Node 4 is connected to the working ring output (column 6, lines 28-32).

With regards to Applicant's claimed *Step D*, Chapman teaches a quiescent (dormant) state in

which the protection ring is neither generated nor terminated (column 5, lines 58-62) and the

APS byte is set to "1111," as described above. In an example where a link is broken and

protection is needed, the value of the APS byte is modified, as described with regards any of

Figures 2, 3, or 5, thus switching normal working mode of each node to one of the other three

working modes when protection is needed.

Regarding Claim 5, Chapman teaches the protection channels and working paths are of

Virtual Container (VC) type, such as a VC3 (column 3, lines 23-25). Further, Chapman teaches

assigning one of multiple available values of an APS byte to denote status of the working and

protection paths, thus mapping one or more than one of multiple VC3s into different logic-systems to form more than one logic system.

Regarding Claim 6, Chapman teaches in Table 1 that the APS byte values, which implement protection switching trigger conditions, also denote the types of traffic that will be let through while the protection condition is in place (e.g., "0010" denoting signal fail high priority traffic).

Regarding Claim 7, Chapman teaches prioritizing both high priority and low priority requests at a bridge controller within a switch from both a local and remote switch (multiple minimum protection units (column 5, lines 1-28), thereby adjusting and crossing services sent to a single minimum protection unit. As the request processing is based on time, this request is handled by the equivalent of a time-division cross-connect unit.

7.   **Claims 8 and 10** rejected under 35 U.S.C. 102(b) as being anticipated by Mochizuki et al (United States Patent 6,122,249).

Regarding Claim 8, Mochizuki teaches an add-drop multiplexing apparatus for SONET and SDH fiber networks. Specifically, Mochizuki teaches a selector 16 that selects one of the low-order signals based on configuration data (format shown in Figure 6) provided by the path setters (column 7, lines 7-10), equivalent to the function performed by Applicant's claimed paging analyzer. Mochizuki also teaches a path controller 15, that writes path data onto holders 13 and 14 (column 7, lines 4-5), and on to a path setting unit 2e or 2w, which cross-connects lower-order signals (column 6, lines 32-34), thus performing functions equivalent to Applicant's claimed switching controller and cross-connection panel.

Regarding Claim 10, Mochizuki teaches in Figure 5 that the ADM apparatus connects to

both a high-order network transmission line and a low-order transmission line (column 6, lines

22-25), equivalent to Applicant's working bus and protection bus, respectively. Figure 5 further

shows bus connections between the input and output of the high-order network transmission line,

the input and output of the low-order network transmission line, the input of the low-order

network transmission line and the output of the high-order network transmission line, and the

input of the high-order network transmission line and the output of the low-order network

transmission line.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

9.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness
       or nonobviousness.

10.   **Claims 2-4** rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman in view

of Applicant's admitted prior art.

Regarding Claim 2, Chapman teaches all of the limitations of Claim 1, as described above. However, Chapman does not teach switching being a multiplex section protection switching, a sub-network connection protection switching, or a channel protection switching. In the same field of endeavor, Applicant's admitted prior art cites an ITU-T proposal, where the "main protection methods of SDH fiber transmission network are channel protection, multiplex section protection, and sub-network connection protection." It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Applicant's admitted prior art with Chapman in order to compensate for line errors (e.g., loss of signal) by switching from a normal operating line to a protection line.

Regarding Claim 3, Chapman further teaches an APS byte which enables the creation of logic-systems for protection switching, as described with regards to Claim 1 above. Chapman also teaches a channel/path trace in which the status/configuration of nodes in the network are gathered (column 2, lines 3-7). As described above with regards to Claim 1, these channel/path trace values can denote working modes, switching modes, bridging modes, and passing modes. Lastly, Chapman teaches that the path trace results are transmitted along with the value of the APS byte to the denoted node (column 6, lines 4-10).

Regarding Claim 4, Chapman further teaches that the nodes respond to the APS byte that is sent out over the working and protection channels, for the switching (column 6, lines 4-10), bridging (column 6, lines 18-20), and passing pages (column 6, line 28-32).

11.   **Claims 9 and 11** rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki in view of Chapman.

Regarding Claim 9, Mochizuki teaches all of the limitations of Claim 8, as described above. However, Mochizuki does not teach the working pages being normal working pages, working pages, bridging pages, or switching pages. In the same field of endeavor, Chapman teaches the equivalents of normal working pages, passing pages, bridging pages, and switching pages as described with regards to Claim 1 above. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Chapman with Mochizuki in order to provide a structure in which a large proportion of the protection channel can be disconnected from the nodes being protected, and is thereby available for protecting other channels in the network.

Claim 11 contains substantially the same limitations as Claim 10, which are disclosed by Mochizuki as discussed above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Chriss whose telephone number is 571-272-1774. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on 571-270-1202. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew Chriss
Examiner
Art Unit 2609

AC